The land use approach is closely linked to the concept of ground wat classification; that is, different aquifers or portions of aquifers require di ferent levels of protection. Land use controls are typically applied on a loc level and frequently involve more detailed mapping and zoning of lar areas or aquifers than state classification systems employ. Moreover, lar use controls may take additional factors into consideration, such as eo nomic impacts of protection measures and consistency with existing zonir and current development patterns. State classification and mapping pr< grams may provide the overall framework for land use controls, but tl final designation of critical areas for local land use regulation may diff< from the state-level efforts.

Land use control programs are generally most effective at protecting sha low unconfined aquifers. Many of these measures such as wellfield restri tive zones would have little or no application to protecting deep confine aquifers. However, one land use control that can be effective for confine aquifers is the establishment of protective zones on surficial recharge area such as has been done on Long Island.

Land use controls are implemented through the application of varioi forms of local and regional authority to protect the public health, safet; and welfare. These include regulations and ordinances adopted by the loc health agency, zoning by-laws, and municipal ordinances enacted und< general home rule authority. In highly critical areas, preservation of hydr< logic conditions in their natural state is required. Open land preservatic can be accomplished through public and private purchase, eminent domai in tax lien takings, and conservation easements.

Successful land use management in critical areas requires ongoing plai ning activity. Site plan reviews during major land developments and pro] erty conversions can accomplish many of the objectives of ground wat< quality protection. Sanitary and industrial surveys and mapping of aqu fers, water supplies, and contamination sources are important tools in e tablishing appropriate land use controls. As new information becom available, boundaries of critical areas can be revised. Monitoring dai should be used to identify problems and assess the effectiveness of controls

In many states, local authority has been more effective in controllir ground water pollution problems than state authority. For example, couni and municipal ordinances controlling underground storage of gasoline we: in place in Cape Cod, Massachusetts, Long Island, New York, Dae County, Florida, and Santa Clara County, California, one to five yea before state or federal laws were enacted.

Local land use controls to protect ground water quality have been impl mented in numerous communities in Massachusetts, New Jersey, Connect